

**Peri-Implant Maintenance Therapy: An Evidence-Based Approach**  
**Buffalo Niagara Dental Meeting**  
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**Edie Shuman-Gibson, RDH, MS, MAADH**  
**[Edie@EdieGibson.com](mailto:Edie@EdieGibson.com)    [www.EdieGibson.com](http://www.EdieGibson.com)**  
**(970) 596-4458**

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Status of Implants Today (PRESENT):

- Predictable
- Esthetic
- Functional
- Success rate on average is 93-98% depending on location

Types of Implants:

- Subperiosteal: on the bone
- Transosteal: through the bone
- Endosseous: in the bone

Terminology:

- Per mucosal Seal
- Biologic Width
- Platform Switching
- Biomechanics

Biocompatible Implant Surface Treatments:

- Grit blasting, acid etched, Grit blasting w/acid etch; roughening with anodization (TPS)  
proprietary individual companies

**Implant Maintenance**

AAP Clinical Recommendations 2013:

- Identify risk factors associated with developing peri-implant diseases
- Establish radiographic baseline at time of implant placement and at final prosthesis insertion
- Monitor implant health and determine inflammatory complications as part of regular perio maint. program
- Establish an early diagnosis and intervention

In Office-Steps for Success (Susan Wingrove’s book-*Peri-Implant Therapy for the DH*)

- Review MDHX
- Assess implant (see below)
- Safe instrumentation based on current research
- Home care review and suggestion

Notes:

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- **5-Step Protocol:**
  - Visual hard and soft tissue assessment
  - Probe/palpate for infection
  - Assess for calculus and/or retained cement
  - Check occlusion and mobility/pain
  - Assess bone level
    - Radiograph
    - 3-D Image

➤ Notes:

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Peri-Implant mucositis-just like gingivitis, but around implants. Only soft tissue; no bone loss; easily reversible if caught early

Peri-Implantitis- Inflammatory reaction; bone loss; affects soft tissues and supporting bone; usually requires surgical intervention

Peri-Cementitis- peri-implant disease due to retained cement; today's epidemic with implants!

#### Radiographic Protocol

- 1-4 implants: Vertical BWX for each implant
- 5+ implant: pano or individual vertical BWX for each implant
- Abutment/Implant connection should be a clear line. NO blurry threads
- Take BWX at implant placement, cover screw, restoration, 6-months, 12-months.
- In a mouth w/ONLY implants-
  - No radiographic changes- every 2-3 years
- In a mouth w/teeth and implants
  - Every year
- If signs of pathology, clinical symptoms, mobility, or advanced bone loss
  - Diagnosis & TX should be initiated
    - X-rays every 6 months for one year after cessation

*\*\*Wingrove, S. (2013). Peri-Implant Therapy for the Dental Hygienist. Wiley-Blackwell*

#### Instrument (scaler) Selection

- Titanium
  
- Plastic/Graphite/Other

#### Contraindications

- Stainless steel or metal cures
- Ultrasonic/Sonic scalers not designed for use around implants
- Coarse/abrasive polishing agents
- Acidulated Phosphate Fluoride (APH)-can erode titanium
- Metal tipped subgingival irrigators

-What are the differences? Scaling implant vs. tooth

-*Natural tooth*: instrument blade adapts to the tooth, inserted between the sulcus and side of the tooth to remove the calculus.

-*Implants*: instrument to remove microbial deposits without altering the implant surface or adversely affecting biocompatibility.\*

**Class I-Implant Maintenance**

- Health is present in an ideal relationship between the peri-implant tissues and the restored implant
- Do not actually clean any portion of the implant fixture
- What instruments?

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**Class II-Implant Maintenance**

- Probing depths are 4mm or greater or some moderate peri-implant soft tissue recession has occurred
- What instruments?

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**Class III-Implant Maintenance**

- Significant recession or pocket formation; implant threads exposed; -implant has lost bone support
- What instruments?

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**Current Literature-2012**

The results of this study indicated that changes in or damage to titanium surfaces might be more affected by the hardness of the scaler tip than by the application method.  
 Within the limitations of this study, the newly developed metallic scaler tip might be especially suitable for peri-implant surface decontamination, due to its limited effects on the titanium surface.

**\*\*\*Key point to remember when making a decision about what instrument to use....**

**Look deeper into the research....**

*(Louropoulou A, Slot DE, Van der Weijden FA. Titanium surface alterations following the use of different mechanical instruments: a systematic review. Clin Oral Implants Res. Published Volume 23, Issue 6, June 2012, Pages: 643–658)*

Look deeper into the research...

The flexibility and size of non-metal curettes may prevent their secure/exact placement & application  
 May result in ineffective plaque removal

Surface alteration may be of secondary concern to plaque removal

\*most of the papers reviewed were before most of the current instruments hit market!

### **Instrumentation on Implants:**

- Titanium or Plastic?

“Although the use of a plastic curette did not significantly roughen the implant surface there was concern that some of the plastic material may have been smeared or deposited on the implant surface, perhaps altering the biocompatibility of the titanium surface.”\*

(\*Dmytryk JJ, Fox SC, Moriary JD. The effects of scaling titanium implant surfaces with metal and plastic instruments on cell attachment. J of Perio 1990;61:491-496.)

### **Instrumentation on Implants**

- Wide-based Implants-Mainly posterior molar implants
- Use Universal posterior scaler with short horizontal strokes
- do not to harm permucosal seal
- (Win Titanium B5-6)

### **Narrow Base Implants-**

- Narrow platform used for lower incisors, congeniality missing laterals, and areas with limited horizontal bone.
- Select a longer blade instrument to stretch under the more bulbous-shaped crowns and framework of a high water bridge or full arch fixed retained prosthesis.
- Short horizontal scaling strokes
- (Win Titanium L3-4)

### **Specialty areas**

- Exposed threads use shorter radius blade tip in side-to-side motion.
- Around ball/under Hader clip bar use short horizontal strokes in sweeping motion.
- Check exposed screw indentations and carefully remove deposits with shorter radius tip.
- Residual cement -Win N128 end short horizontal strokes to dislodge cement
- sweep under the Hadar bar to dislodge calculus

### **Implant Instruments**

American Eagle (titanium)  
PDT Wingrove™ Titanium Implant Instrument “Go –To” Set  
Hu-Friedy Implacare II™ (plasteel)  
Premier Implant Scalers (graphite)  
Implant Prophy+ TESS International  
ImplaKlean by Pac-Dent

### **Safe instrumentation: Ultrasonic Guidelines**

Plastic tip can shred on roughened implant surface/thread

**\*\* Hu-Friedy PI tip-made of PEEK and shown to be safe around implants, autoclavable, will not shred!**

### **Polishing Agents: non abrasive is key!**

- Toothpaste
- Tin Oxide
- Fine Prophy Pastes
- Soft Cup
- \*\*Sunstar PROPHYciency Clean**
- Livionex

### **Contraindications:**

- Stainless Steel instruments
- Ultrasonic or sonic scalers (not specifically for implants)
- Coarse or abrasive polishing pastes
- Acidulated Phosphate Fluoride (APF)
- Low PH pastes/gels/rinses
- Metal tipped subgingival irrigators
- Excessive pressure or trauma to the perimucosal seal, surface of the abutment & implant

### **Adjuncts**

Decontamination w/antiseptic intervention

*CHX-alcohol free will NOT corrode titanium abutments!*

**Sunstar GUM™ Paroex**

Chlorine Dioxide (Closys)

Air Polishers-Glycerin Powder!!

**-use glycerin powder only**

**-make sure to irrigate w/plain water after**

### **Oral Irrigators**

-Irrigate vs. Rinsing w/CHX

-Study conducted to compare rinsing with 0.12% CHX to irrigating with 0.06% CHX

-Irrigation group was 87% more effective in reducing bleeding and 3x more effective in reducing gingivitis than the rinsing group

-Irrigate vs. Floss

-study compared the use of string floss to water floss with implants.

-water flosser reduced bleeding around implants by 81% compared to 33% for flossing 2.46-fold difference

**\*WaterPik Water Flosser w/special tips**

### **Varnish**

\*Varnish on exposed threads?

- Prevention of colonization of *S. aureus* bacteria on exposed threads of implants
- a clear varnish of 1% CHX and 1% thymol
- proven studies on biocompatibility with titanium implants

### **Probiotics**

**Sunstar Butler PerioBalance -28 day supply**

**Oragenics Evorapro with ProBiora3 [www.oragenics.com](http://www.oragenics.com) 90 day supply**

### **Regenerative or Resective Surgery-RE-Osseo integration**

-Titanium brushes-

-Salvin RotoBrush

-PeriBrush™-Tigran Technologies

-i-Brush by NeoBiotech (stainless steel)

**-Emdogain-Straumann®**

**HEMECARE FOR PATIENTS**

**Product selection based on:**

- Location length, & angulation of abutments
- Suprastructure design
- Anatomical limitations
- Patients habits, motivation & manual dexterity
- Plaque and calculus accumulation
- Patients general health and medications
- Keep it simple!!!

**Client Education begins with MOTIVATION!**

- We are educators, not just care providers
- We must find a way to *MOTIVATE* our clients
- Without motivation, how can learning occur?

**Client Education begins with MOTIVATION!**

It begins at the first visit and continues throughout the treatment of the client  
The motivation level of your client plays an integral factor in the success or failure of treatment!  
\*\*(O’Leary, T.,Periodontal Abstr. 1968)

**Oral Hygiene Options-Keep it SIMPLE**

***Sunstar GUM® Implant Care Kit***

Power & Manual Toothbrush

Specialty Floss

***Interdental Brush- Sunstar GUM® SoftPicks or Go Between Ultras***

Oral Irrigators-WaterPik has the research to back up their claims!

Chemotherapeutic Mouth Rinses

***Probiotics!... Sunstar Periobalance; Orogenics Evorapro-ProBiora3***

**Fluoride and Implants**

High FL concentrate and a low PH (acidic) will remove the oxide layer on implants which can make the titanium anti-corrosive. Once this layer is removed then the implant is prone to corrosion.\*  
PH is Key!

**NOTES:**

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**Home Care Recommendation/Protocol for Patients**

Implant Type	Oral Home-Care Summary
<b>Single implant, ball/locator attachment, bar-retained implants</b>	Brush twice daily with low-abrasive dentifrice Floss with dental tape once daily (mesial/distal and facial/lingual) If recommended, use, soft pick, sulcabrush and/or proxybrush, non-alcohol antimicrobial rinse, or water irrigation unit.
<b>Full Fixed Prosthesis/ Supra Structures (e.g. All-on-4™)</b>	Brush twice daily with low-abrasive dentifrice Floss once daily with threaded floss or implant specific floss Use water irrigation unit, one to two times daily, and on low power. Direct ¼ inch from flat surface, horizontally on low setting to avoid the Per mucosal seal. If inflammation is present add a non-alcohol antimicrobial rinse in 1:10 dilution.
<b>Removable Prosthesis' (e.g. Overdenture)</b>	Soak prosthesis (Overdenture) in specified cleaner for recommended time, brush with denture brush to clean, being careful of underside, and rinse. Check clips or O-rings. If worn or missing see a dental professional to replace according to recommendations.
<b>Implants with Mucositis and/or Implantitis</b>	Follow specific home-care protocol according to prosthesis and add antimicrobial therapy. Use sulcabrush, soft pick, or proxybrush dipped in non-alcohol antimicrobial rinse, soak area of infection twice daily. Re-evaluate in six weeks-possible surgical intervention is necessary.

➤ **Your ACTION PLAN/Notes:**

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